

WHAT IS CLAIMED IS:

1. A hand-off notifying and controlling system, comprising:
a mobile node (MN) that transmits a registration request message;
a first foreign agent (FA) that provides a mobile internet protocol (IP) service to the MN,
before a hand-off of the MN takes place;

5 a second FA that provides the mobile IP service to the MN after the hand-off takes
place; and

a home agent (HA) that generates and transmits a registration release message to the first
FA, upon receipt of the registration request message from the MN sent via the second FA, when
the hand-off takes place.

10 2. The system of claim 1, wherein the second FA deletes prior registration
information of the MN, stored in at least a visitor table, according to the registration release
message.

15 3. The system of claim 1, wherein the registration release message has a data
structure and type field value identical to the registration request message.

4. The system of claim 1, wherein the registration release message comprises:
a type field set to identify a type of message;

- a life time field that sets an effective registration time of the MN;
 - a home address field that sets an IP address of the MN;
 - a home agent field that sets an IP address of the HA;
 - a care-of-address field that sets an IP address of an ending point of a tunnel; and
 - an identification field set to associate the registration request message and a registration
- reply message.

5. The system of claim 4, wherein the HA sets the life time field of the registration release message to the value of '0'.

6. The system of claim 1, wherein the HA does not transmit a registration release message, if an IP address of the MN is a multiple care-of address.

7. A hand-off notifying and controlling method, comprising:

- transmitting a registration request message from a mobile node (MN) to a home agent (HA) when a hand-off takes place from a first foreign agent (FA) to a second FA;
- transmitting a registration release message from the HA to the first FA; and
- deleting registration information of the MN at the first FA in accordance with the registration release message.

8. The method of claim 7, wherein the registration release message has the same data structure and type field value as the registration request message.

5 9. The method of claim 7, wherein the registration release message comprises:
a type field set to identify a type of message;
a life time field that sets an effective registration time of the MN;
a home address field that sets an internet protocol (IP) address of the MN;
a home agent field that sets an IP address of the HA;
a care-of-address field that sets an IP address of an ending point of a tunnel; and
10 an identification field set to associate the registration request message and a registration
reply message.

10 10. The method of claim 9, wherein the registration release message sets the life time
field value to '0' to delete the registration information of the MN stored in at least a visitor table
15 of the first FA that provided a mobile IP service to the MN before the hand-off.

11. The method of claim 7, wherein the HA does not transmit a registration release
message, if an internet protocol (IP) address of the MN is a multiple care-of address.

12. A hand-off notifying and controlling method in a mobile communication network,
comprising:

transmitting a registration request message from a mobile node (MN) to a new foreign
agent (FA), when a hand-off of the MN to the new FA takes place;

5 transmitting the registration request message received by the new FA to a home agent
(HA) of the MN;

transmitting a registration release message, having a data structure and type field value
the same as the registration request message, from the HA that has received the registration
release message from the new FA, to an old FA; and

10 deleting registration information of the MN, stored in at least a visitor table of the old
FA, in accordance with the registration release message.

13. The method of claim 12, wherein the registration release request message
comprises:

15 a type field set to identify a type of message;

a life time field that sets an effective registration time of the MN;

a home address field that sets an internet protocol (IP) address of the MN;

a home agent field that sets an IP address of the HA;

a care-of-address field that sets an IP address of an ending point of a tunnel; and

20 an identification field set to associate the registration request message and the registration
release message.

14. The method of claim 12, wherein the HA sets a life time field of the registration release message to a value of '0' to release the registration information of the MN in the old FA that provided mobile IP service to the MN before the hand-off.

5 15. The method of claim 12, wherein the HA does not transmit the registration release message, if an internet protocol (IP) address of the MN is a multiple care-of-address.